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Owner's Manual

NetDirector™ Matrix KVM Switches

Model #: B060-032 (32-Port, 4-User)
B060-016-2 (16-Port, 2-User)

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Note: Follow these instructions and operating procedures to ensure correct performance and to prevent damage to this unit or to its connected devices.

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This package should include:

- 1 B060-032 or B060-016-2 KVM Switch
- 1 Power Cord
- 1 2-ft. Daisy Chain Cable
- 1 CD with Owner's Manual and Quick Start Guide

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Introduction

Features

- Two consoles (for B060-016-2) or four consoles (for B060-032) independently and simultaneously control up to 16 (for B060-016-2) or up to 32 (for B060-032) directly connected computers
- Daisy-chain up to 7 additional units
- Cascade up to 16 (for B060-016-2) or up to 32 (for B060-032) compatible KVM switches from each station on the chain
- Control up to 4,096 computers on a daisy-chained/cascaded installation
- Compact design - RJ45 connectors allow rack mounting in a 19", 1U, system rack
- Multi-platform support: PC, Mac and Sun
- Console conversion - any type of console can control any type of computer - mixed combinations (PS/2 & USB) supported on both the console and computer sides
- PS/2 keyboard and mouse emulation - computers boot even when the console focus is elsewhere - Keep Alive feature ensures that the keyboard and mouse work properly even if the switch temporarily loses power
- Hot pluggable; add or remove components without having to power off the switch
- No software required; convenient computer selection via intuitive hotkey combinations or On Screen Display (OSD) menus
- OSD port list automatically expands when stations are added - port names are automatically reconfigured when the station sequence is changed
- OSD screen automatically adjusts to resolution changes
- Auto Scan feature for monitoring user-selected computers
- Three level password security: Super Administrator, Administrator, and Users
- LCD, VGA, SVGA, XGA, and MultiSync support; DDC2B
- Superior video quality - up to 1024x768 @ 60Hz at 500ft.
- Auto Signal Compensation (ASC) assures optimum video resolution for distances up to 500ft between the switch and the consoles or computers - no DIP switch setting required
- Lifetime firmware upgrading via flash ROM
- Built-in circuit breaker protects against short circuits and system overloads

Hardware Requirements

Console

The following equipment must be used for each console:

- A VGA, SVGA, or Multisync monitor capable of the highest resolution that you will be using on any computer in the installation.
- Either a PS/2 or a USB keyboard and mouse.

Computers

The following equipment must be installed on each computer:

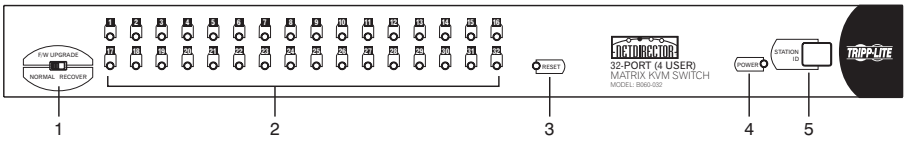
- An HD15 video port.
- Either a PS/2 style (MiniDIN6) mouse port and PS/2 style keyboard port; or USB ports (for a USB keyboard and USB mouse); or, for legacy Sun systems, a Sun style keyboard port (MiniDIN8).

Cables and Interface Modules

The following cables are required for use with the Modular Matrix KVM switch:

Function		Cable
Console Interface Module to B060 Series KVM		Cat5e Patch Cable (Tripp Lite N001 Series Patch Cables)
B060 Series KVM to Server Interface Module		
Console Interface Modules	For PS/2 Console	B062-001-PS2
	For USB Console	B062-001-USB
Server Interface Modules	For PS/2 Server	B054-001-PS2
	For SUN Server	B054-001-SUN
	For USB Server	B054-001-USB
Daisy-chain Cables		P770 Series of Cables

B060 Series Front View (B060-032 Shown)



1. Firmware Upgrade Recovery Switch

During normal operation and while performing a firmware upgrade, this switch should be in the NORMAL position. If a firmware upgrade operation does not complete successfully, slide this switch to the RECOVER position and do a warm reset (see p. 31), to return the switch to its prior firmware state.

After returning the switch to its prior firmware state, slide the switch back to the NORMAL position to attempt the firmware upgrade again, or to use the switch with its prior firmware.

2. Port LEDs

The Port LEDs are multicolored (Red / Green / Amber), and provide status information about their corresponding CPU Ports as follows:

Color	Condition	Indication
Amber	Steady	Port is selected and the connected server is on.
	Flashing	Port is selected; Port is connected to a powered ON KVM switch
Red	Steady	Port is selected but connected server is OFF
Green	Steady	Port is not selected, the connected server is ON
	Flashing	Port is not selected: Port is connected to a powered ON KVM switch
Off		Port is not selected and the server is OFF

3. Reset Switch

Pressing this switch in performs a System Reset.

Note: This switch is semi-recessed and must be pushed with a thin object - such as the end of a paper clip, or a ballpoint pen.

4. Power LED

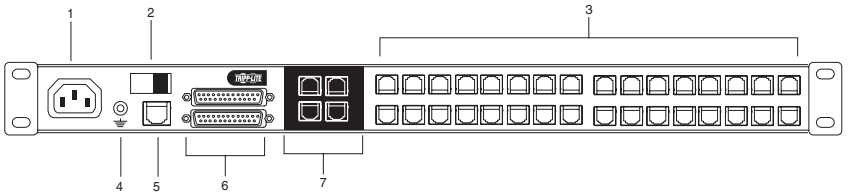
Lights to indicate that the B060 Series KVM is powered up and ready to go.

5. Station ID LED

The Station ID on the B060 Series KVM is displayed here. If this is a Single Station installation (see p. 8), or the First Station on a Daisy Chained installation (see p. 10), the KVM has a Station ID of 01.

On a Daisy Chained installation, the KVM auto-senses its position and displays the Station ID that corresponds to its place in the chain. (see Port ID Numbering, p. 17 for details).

B060 Series Rear View (B060-032 Shown)



1. Power Socket
The power cord to the AC source plugs in here.

2. Power Switch
This is a standard rocker switch that powers the unit On and Off.

3. Computer Port Section
The Cat5e cables that link the KVM to KVM cables that connect to the computers plug in here.

4. Circuit Breaker
This circuit breaker protects against short circuits and system overloads.

5. Firmware Upgrade Port
The Firmware Upgrade Cable that transfers the firmware upgrade data from the administrator's computer to the KVM (see p. 31), plugs into this RJ45 connector.

6. Daisy Chain Ports
When Daisy Chaining Units (see p. 10), the daisy chain cables plug in here.

The upper port is the Chain In port; the lower one is the Chain Out port. The Chain In port is not used on the Master (First Stage) unit.

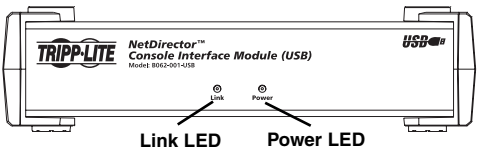
7. Console Port Section
The Cat5e cables from the Console Interface Modules plug in here.

Console Interface Modules

The purpose of the Console Interface Modules is to provide flexibility for your installation by allowing PS/2 and USB interfaces to be mixed and matched at the console side. With this approach, either type of console can access and control any type of computer. The modules currently available are shown in the table below:

Module	Type
B062-001-PS2	For PS/2 consoles
B062-001-USB	For all USB consoles (including Mac and Sun)

Console Interface Modules Front View



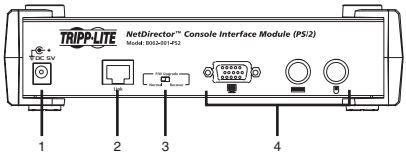
The front panel configuration of both B062 series modules is the same. It consists of two LEDs:

Link LED lights to indicate that the module is connected to the KVM.

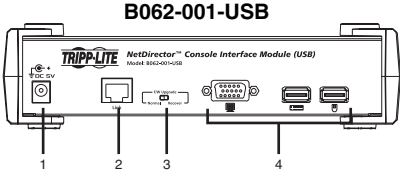
Power LED lights to indicate that the module is turned On and receiving power.

Console Interface Modules Rear View

B062-001-PS2



B062-001-USB



1. Power Jack

The power adapter cable plugs in here.

2. I/O Jack

The cable that links the module to the B060-032/B060-016-2 plugs in here.

3. Firmware Upgrade Recovery Switch

During normal operation and while performing a firmware upgrade, this switch should be in the NORMAL position. See p. 4 for details about this switch.

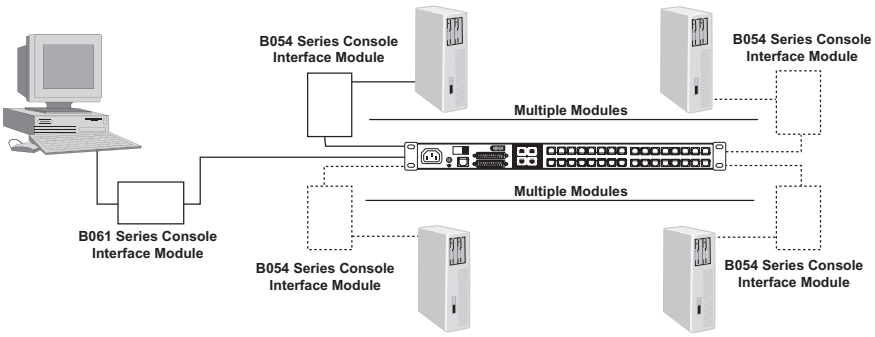
4. Console Port Section

The cables from your keyboard, monitor and mouse plug in here. The keyboard and mouse ports of both modules are labeled with an appropriate icon to indicate which is which. The B062-001-PS2 ports are also color-coded.

Installation

Overview

For convenience and flexibility that allows mixing the PS/2 and USB interfaces, the KVM's design utilizes *Console Interface Modules* that act as signal translation intermediaries between the consoles and the switch, and *Server Interface Modules*, that serve as intermediaries between the switch and the computers:


B054 Series Console Interface Module
B054 Series Console Interface Module
Multiple Modules
Multiple Modules
B061 Series Console Interface Module
B054 Series Console Interface Module
B054 Series Console Interface Module

A separate Console Interface Module is required for each console you connect. Likewise, a separate Server Interface Module is required for each computer connection. The Server Interface Module model number for each interface is shown in the table below. The model numbers of the Console Interface Modules are given in the table on p. 4.

Interface	Server Interface Modules
PS/2	B054-001-PS2
SUN	B054-001-SUN
USB	B054-001-USB

Before you Begin

1. Make sure that power to all the devices you will be connecting up have been turned off. You must unplug the power cords of any computers that have the Keyboard Power On function.
2. To prevent damage to your installation, make sure that all devices on the installation are properly grounded.

Single Stage Installation

In a Single Stage installation, there are no additional KVM switches daisy chained or cascaded down from the first unit. To set up a single stage installation, refer to the diagram on p.9 (the numbers in the diagram correspond with the numbers of the instruction steps), and do the following:

1. Connect the Console to the Console Interface Module

Plug your keyboard, mouse, and monitor into their respective ports on the Console Interface Module. Each port is marked with an icon to indicate itself.

Note: The diagram shows the rear panel of both the B062-001-PS2 (PS/2 port) and B062-001-USB (USB port) modules.

2. Connect the Console Interface Module to the B060-032/B060-016-2

Use Cat5e cable to connect the Link port of the module to one of the Console ports on the B060-032/B060-016-2's rear panel. Up to four consoles can be connected per KVM.

Note: The distance between the Console Interface Module and the B060-032/B060-016-2 must not exceed 500 feet. (Repeat Steps 1 and 2 for any other consoles you wish to connect.)

3. Connect the B060-032/B060-016-2 to the Server Interface Module

Use Cat5e cable to connect any available CPU Port to a Server Interface Module that is appropriate for the computer you are installing.

Note: The distance between the B060-032/B060-016-2 and the Server Interface Module must not exceed 500 feet.

4. Connect the Server Interface Module to the Computer

Plug the connectors on the Server Interface Module into the appropriate ports of the computer you are installing.

Note: Repeat steps 3 and 4 for all the computers you wish to connect. Up to 32 computers can be connected in this fashion.

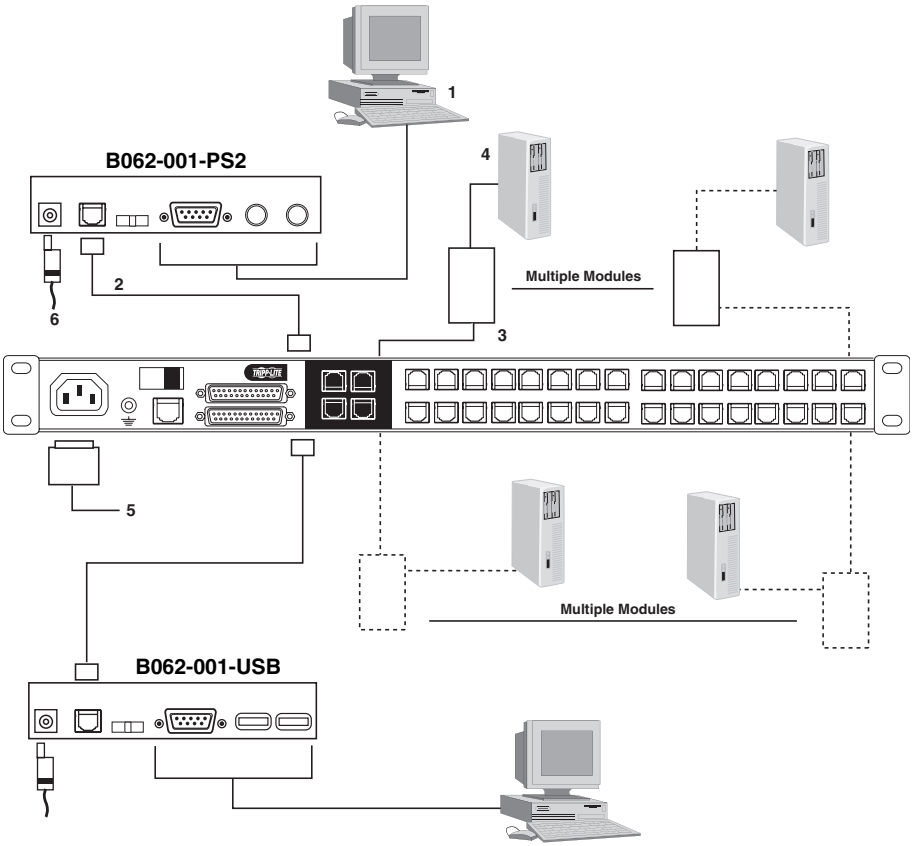
5. After all computers have been cabled up, plug the female end of the power cord into the B060-032/B060-016-2's Power Socket; plug the male end into an AC power source.

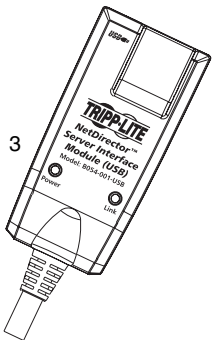
6. For each Console Module, plug its power adapter into an AC source; plug the power adapter cable into the unit's power jack.

7. Turn on the power to the B060-032/B060-016-2.

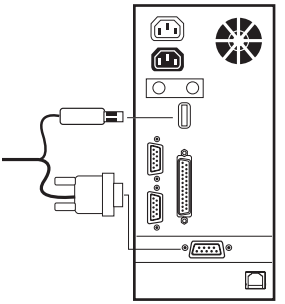
8. Turn on the power to the computers.

Single Stage Installation

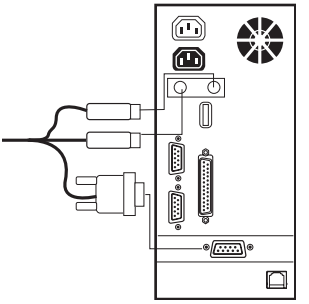




USB Cable Connection



PS/2 Cable Connection



Multilevel Installations

The number of computers that can be added to your installation can be greatly expanded by performing a multilevel installation. The B060 Series KVM supports three types of multilevel installation:

- Daisy chained
- Cascaded
- Daisy chained plus cascaded

Overview

Daisy chaining refers to connecting two or more KVM switches via dedicated daisy chain ports. The switches are strung together in a chain (see the diagram on p. 11).

With daisy chaining, none of the switch's CPU ports are used to connect to the next switch. The port capacity of a daisy-chained installation is the total of all the CPU ports of all the KVM switches on the chain. For example, a B060-032 has 32 CPU ports. On an installation with eight daisy-chained switches the number of available ports is 32 x 8 = 256.

Cascading involves using the CPU ports of a *Parent* KVM switch (one that is above a switch linked down from it) to connect to a *Child* KVM switch. Cascading adds capacity to a KVM installation, but the parent loses one CPU port for each cascaded KVM.

The B060 Series KVM supports both daisy chaining and cascading. In addition, it supports combining the two methods—providing enormous capacity and flexibility for expanding the installation. The following sections provide the information and procedures involved in setting up the various multilevel installations.

Daisy Chaining

Up to 7 additional B060 Series KVM units can be daisy chained together; each capable of supporting four independent consoles. The first B060 Series KVM is considered the **Master** unit; the daisy chained B060 Series KVMs are considered **Slaves**.

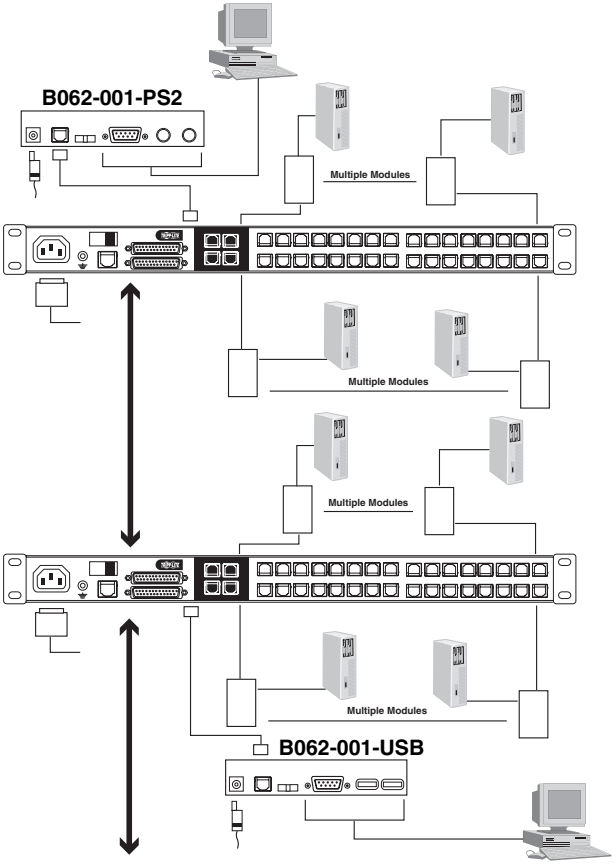
In a complete daisy chained installation, the consoles that belong to the Master switch can access and control all of the computers (up to 256) on the installation. The consoles belonging to each Slave switch only control the computers (up to 32) connected to their switch.

To set up a daisy chained installation, refer to the diagram on page 11 and do the following:

1. Make sure that power to all the devices you will be connecting up has been turned off.
2. Use a daisy chain cable set (described in the *Cables* section, p. 3), to connect the *Chain Out* port of the parent B060 Series KVM unit to the *Chain In* port of the child B060 Series KVM unit (First Station Out to Second Station In, Second Station Out to Third Station In, etc.).

   Note: You cannot use the Chain In port of the First Station B060 Series KVM, since it is the highest level parent.
3. If you wish to install any consoles on this switch, follow the procedure described for the Single Stage Installation on p. 8.
4. Use Cat5e cabling and a Server Interface Module (described in the Cables section, p. 4), to connect any available CPU Port on the B060 Series KVM to the Keyboard, Video and Mouse ports of the computers you are installing.
5. Repeat the above steps for any additional B060 Series KVM units you wish to add to the chain.
6. Plug the power cord into an AC power source and into the B060 Series KVM's power socket.
7. Power up the installation according to the following procedure:
   a. Switch on the power for the First Station. Wait for the unit to ascertain its Station ID and display it on the Station ID LED. (The Station ID for the First Stage unit is 01, the ID for the Second Stage unit is 02, the ID for the Third Stage unit is 03, etc.).
   b. Switch on the power for each Station on the installation in turn (Second Station, then Third Station, etc.). In each case, wait for the Station ID to be ascertained and displayed on the current Station before powering on the next one.
   c. After all the Stations are up, power on the computers.

Multilevel Installations



Cascading

Another way of adding capacity to your installation is to cascade additional KVM switches from the B060 Series KVM's CPU ports. Up to 16 or 32 additional KVM switches can be cascaded depending on the model. Cascading does not increase the number of consoles that can be used to control the computers (unlike daisychaining).

Note: 1. While you can daisy chain B060 Series KVM's, you cannot cascade them.

2. Switches cannot be cascaded beyond the second stage.

In a cascaded installation, the B060 Series KVM is considered the **First Stage** unit; cascaded KVM switches are considered **Second Stage** units. The B060 Series KVM supports two types of cascade: 1) Protocol Interface Cascading (see the installation diagram under Protocol Interface Cascading section), and 2) Physical Interface Cascading (see the installation diagram under Physical Interface Cascading section).

Multilevel Installations

Protocol Interface Cascading

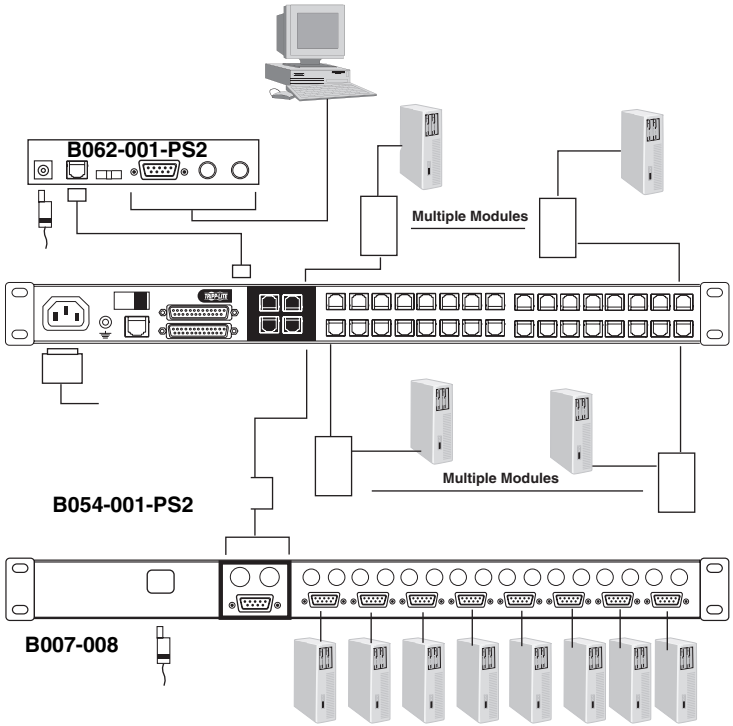
Protocol Interface Cascading refers to cascading to a second stage KVM switch (such as the eight port Tripp Lite B007-008) that uses the same data transfer protocol as the first stage B060 Series KVM.

With this type of cascade, all of the separate switch OSDs are integrated so that when the B060 Series KVM consoles bring up the OSD, it lists all of the computers connected to all of the units.

To set up a Protocol Interface Cascade, refer to the installation diagram below and do the following:

1. Make sure that power to all the devices you will be connecting up has been turned off.
2. Use Cat5e cable to connect any available CPU Port on the First Stage unit (the B060 Series KVM) to a PS/2 style Server Interface Module (as described in the Cables section, p. 3); plug the adapter cable's KVM connectors to the Keyboard, Video, and Mouse Console ports of the Second Stage unit.

   Note: The distance between the Second Stage unit and the B060 Series KVM must not exceed 500ft.
3. Use KVM cable sets (as described in the Cables section of the Second Stage unit's User Manual), to connect any available CPU port on the Second Stage unit to the Keyboard, Video, and Mouse ports of the computer you are installing.
4. Plug the Second Stage unit's power adapter into an AC source; plug the power adapter cable into the unit's Power Socket.
5. Repeat steps 2 - 4 for any other Second Stage units you wish to connect.
6. Turn on the power for the First Stage unit; turn on the Second Stage unit, turn on the power to all the computers.



Multilevel Installations

Physical Interface Cascading

Physical Interface Cascading refers to cascading to a second stage KVM switch (such as the Tripp Lite B022-016) that doesn't utilize the same protocol as the first stage B060 Series KVM, but uses the same physical interface (PS/2 or USB ports, for example).

The advantage of cascading to a switch like the B022-016 is that it yields enormous expansion capability. For example, since the B060-032 can be daisy chained to 31 additional B022-016s, up to 16,384 computers can be controlled from a single B060-032 (32 B060-032 ports x 32 B022-016s x 16 ports per switch = 16,384 ports).

The operational difference between this method and Protocol Interface Cascading is that since the OSD protocols are not the same, the OSDs of the cascaded B022-016s cannot be integrated. Unlike Protocol Interface Cascading, the OSD that the operator works with is the OSD for each particular B022-016 - not an OSD that incorporates all of the switches on the installation.

Therefore, in order to access a computer connected to a particular B022-016, the operator must first bring up the B060 Series KVM's OSD to access the target B022-016. The B022-016's OSD is then activated in order to access the target computer.

In this type of installation, the B060 Series KVM is considered the **First Stage** unit; the B022-016 is considered the **Second Stage** unit. If there are additional B022-016s daisy chained down from the Second Stage B022-016, the entire chain is seen as a Second Stage unit, with the top level B022-016 (the Master switch) as the OSD access point for the entire chain.

To set up a Physical Interface Cascade, refer to the installation diagram below, and do the following:

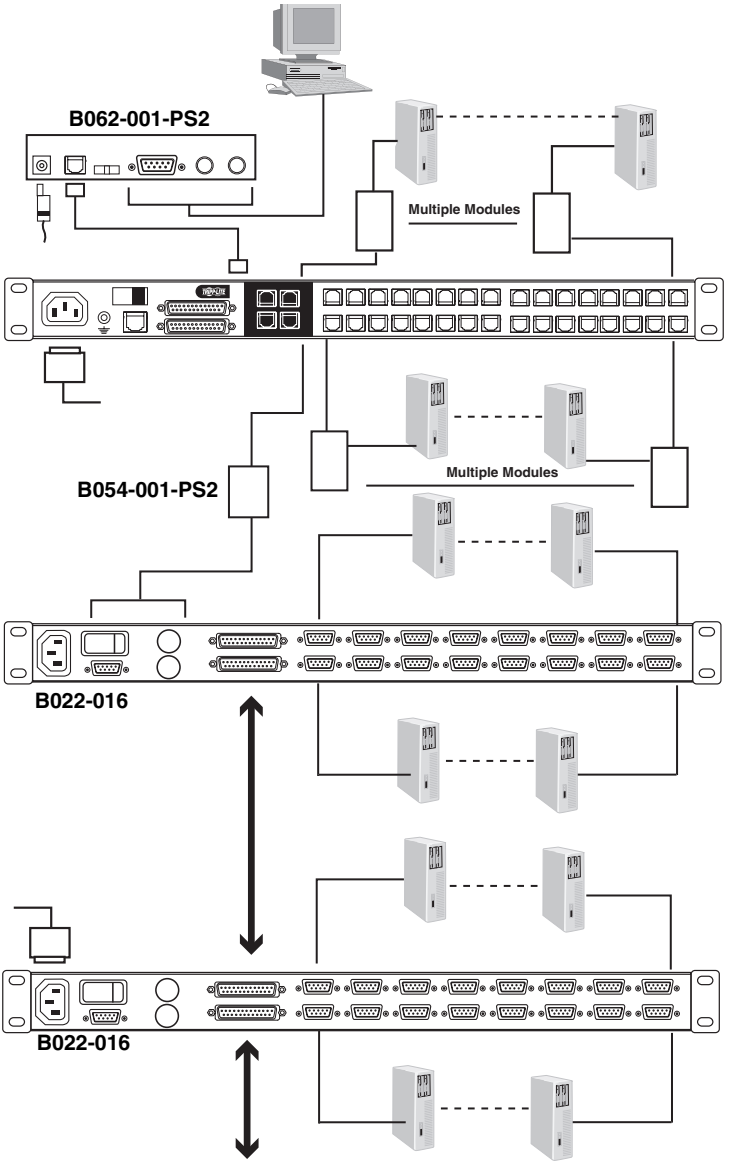
1. Make sure that power to all the devices you will be connecting up has been turned off.
2. Use Cat5e cable to connect any available CPU Port on the First Stage unit (the B060 Series KVM) to a PS/2 style Server Interface Module (as described in the Cables section, p. 3); plug the Server Interface Module's KVM connectors to the Keyboard, Video, and Mouse Console ports of the B022-016.

   Note: The distance between the Second Stage unit and the B060 Series KVM must not exceed 500ft.
3. Use KVM cable sets for the B022-016 to connect any available CPU port on the Second Stage unit to the Keyboard, Video, and Mouse ports of the computers you are installing. Note that the B022-016 and the B060 Series KVM use different types of cables.
4. Plug the power cord into the B022-016 switch's Power Socket and into an AC source (such as a surge suppressor or UPS).
5. Repeat steps 2 - 4 for any other top level Second Stage units you wish to connect.
6. Turn on the power for the First Stage unit; turn on the power for all Second Stage units; turn on the power to all the computers.

   Note: If you are daisy chaining B022-016s, follow the instructions provided in the B022-016 User Manual for chaining. Power on each chain according to the instructions in the manual.

Multilevel Installations

Physical Interface Cascading



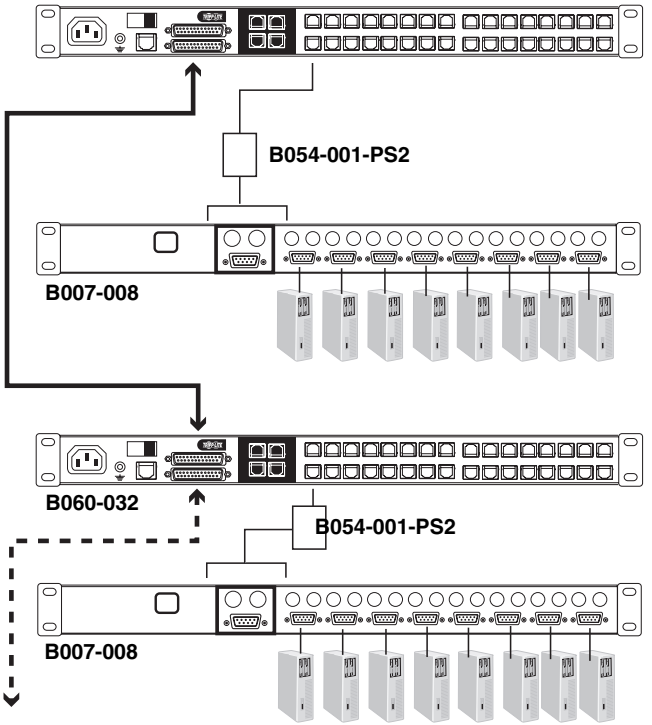
Daisy Chaining Plus Cascading Expansion

B060 Series KVMs can be daisy-chained to other B060 Series KVMs to produce extremely large KVM matrixes. Under Protocol Interface Expansion, up to 8 daisy-chained B060 Series KVMs can have an 8-port B007-008s cascaded from each port, allowing up to 2,048 computers and up to 32 consoles in a full installation (8 x 32 x 8) when considering the 32-port B060-032.

Protocol Interface Expansion

To set up a daisy chained/cascaded installation under Protocol Interface Expansion, refer to the diagram below, and do the following:

1. Follow the cabling procedures given in the Cascading and Daisy Chaining sections.
2. Power up the daisy chained B060 Series KVM Stations according to the sequence given in the Daisy Chaining section (p. 10).
3. After all the daisy chained B060 Series KVM Stations are up, power on the cascaded Stations.
4. After all the cascaded Stations are up, power on the computers.

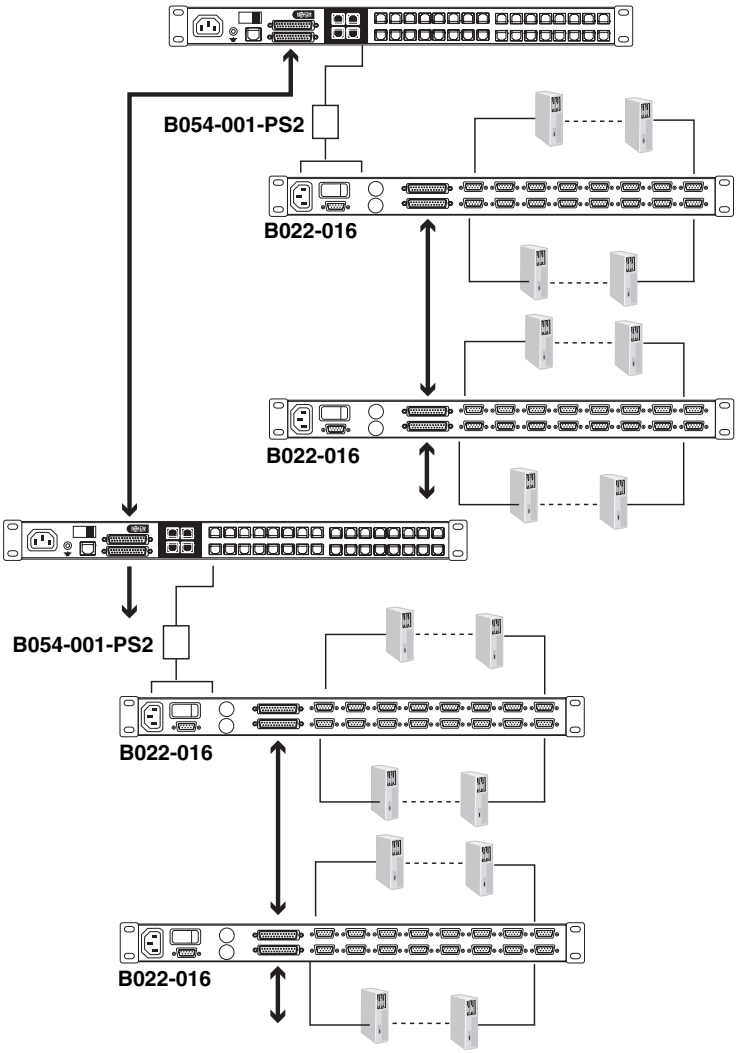


Daisy Chaining Plus Cascading Expansion

Physical Interface Expansion

To set up a daisy chained/cascaded installation under Physical Interface Expansion, refer to the diagram below, and do the following:

1. Follow the cabling up procedures given in the Daisy Chaining sections.
2. Power up the daisy chained B060 Series KVM Stations according to the sequence given in the Daisy Chaining section (p. 10).
3. After all the daisy chained B060 Series KVM Stations are up, power up each chain of B022-016s according to the instructions provided in the B022-016 User Manual.
4. After all the B022-016s are up, power on the computers.



Topology Considerations

The use of RJ-45 CPU connectors, combined with our Auto Signal Compensation (ASC), allow signals to travel up to 500 feet (150 meters) and still maintain reliability and high video resolution. This allows the B060 Series KVM installation to take advantage of the internal Cat5e and Cat6 wiring built in to most modern commercial buildings.

Note: Although the B060 Series KVM supports legacy CAT5 wiring, the performance and video quality may degrade over longer distances.

Since the data signals are not transmitted in packets, the transmission cannot go through network hubs or switches. Passive components such as patch panels, keystone jacks, patch cables, etc. can be used to channel the traffic.

Basic Operations

Hot Plugging

The B060 Series KVM supports *hot plugging*—components can be removed and added back into the installation by unplugging their cables from the ports without the need to shut the unit down. In order for hot plugging to work properly, however, the procedures described below must be followed:

Switching Station Positions: On daisy chained installations, you can switch station positions by simply unplugging from the old parent and plugging into a new one.

Hot Plugging Console Ports: Keyboard, monitor, and mouse can all be hot plugged. If you experience a problem after you plug in a new mouse, do a system reset by pressing the reset switch on the B060 Series KVM's front panel (see p. 4 for details). If this doesn't resolve the problem, restart the computers that have the problem.

Powering Off and Restarting

Powering off the B060 Series KVM does not affect the computers attached to it. When you restart the B060 Series KVM, you will regain control immediately. To replace a B060 Series KVM, simply power it down; unplug the cables; plug them into the new unit; and power the new unit on.

Note: If any of the computers behave strangely after powering off and restarting, or changing a switch, simply restart the computer.

Port Selection

Port Selection is accomplished either by entering Hotkey combinations from the keyboard, or by means of the B060 Series KVM's OSD (On Screen Display). OSD Operation is discussed in detail in the next chapter; *Hotkey Port Selection* is discussed on p. 27.

Although hotkeys are handy for a single stage installation, we strongly recommend you use the more powerful and versatile OSD - especially for daisy chained, cascaded, and combined installations.

Port ID Numbering

Each CPU port on a B060 Series KVM installation is assigned a unique Port ID. You can access and control any computer on the installation by specifying the Port ID of the port that it is connected to. Depending on where the computer is on the installation, its Port ID will either have two or three parts.

Single Stage and Daisy Chained Installations

For single stage and daisy-chained installations, the Port ID is made up of two parts: a *Station Number* and a *Port Number:*

- The *Station Number* - is a two digit number which reflects the switch's position in the daisy chain sequence. This corresponds to the number displayed on the front panel Station ID LED.
- The *Port Number* - reflects the port on the B060 Series KVM Station that the computer is connected to.
- The Station Number precedes the Port Number.

Note: Station numbers from 1 - 9 are padded with a preceding zero, so they become 01 - 09.
For example, a computer attached to ***Port 12*** *of* ***Station 6*** *would have a Port ID of:* ***06-12****.*

Basic Operations

Cascaded Protocol Interface Installations

The Port ID for computers on Protocol Interface cascaded installations is made up of three parts:

- The *Station Number* of the B060 Series KVM
- The *Port Number* on the B060 Series KVM that the cascaded KVM switch links back to.
- The *Port Number* on the cascaded KVM switch that the computer is connected to.

For example, a computer attached to **Port 8** of a KVM switch that is cascaded from **Port 15** of a B060 Series KVM in the **Station 10** position, would have a Port ID of: **10-15-8**.

Cascaded Physical Interface Installations

Under Physical Interface Expansion, B022-016s are cascaded down from the B060 Series KVM. Since the OSD protocols are different, there are separate OSDs for each. When you invoke the OSD (see p. 19), the B060 Series KVM OSD screen comes up first. When you select the port that the target B022-016 is connected to, its OSD screen replaces the B060 Series KVM's, and you can select the computer you want to access from the B022-016 OSD screen. Aside from this difference, the port numbering follows the examples shown above.

User Management and Security

The B060 Series KVM permits the creation of 6 operator profiles when the switch is either on a stand alone installation or is the Master switch of a multilevel installation, as follows:

- 1 Super Administrator
- 1 Administrator
- 4 Users

On a single stage installation, up to two (for B060-016-2) or up to four (for B060-032) operators have simultaneous and independent control of up to 16 (for B060-016-2) or up to 32 (for B060-032) computers. In a daisy-chained installation, a maximum of 16 or 32 operators can exist (2 or 4 operators on the master KVM who can access all systems, and 2 or 4 operators on each of the 7 Slave KVMs each having access to the 16 or 32 ports on that KVM depending on the model). Each Slave B060 Series KVM also has 6 operator profiles, as above.

Note: 1. The Super Administrator can log in on a slave unit, but his or her authority only governs the segment he or she logs in on-just like that of an ordinary Administrator.

2. Operator profiles are different from actual operators. For example, the B060-032 has four console ports and allows four actual operators to access the switch simultaneously. Operator profiles specify the rights assigned to particular operators. Theoretically, one operator can use the same operator profile to occupy all 4 console ports.

The Super Administrator has administrative power over the whole chain, he can assign and change passwords and access rights for all operators on all segments (see *SET USERNAME AND PASSWORD*, p. 23, and SET *ACCESSIBLE PORTS* p. 24).

The Administrator's power is limited to only that segment of the installation that the B060 Series KVM he is logged in on controls. He can assign and change passwords and access rights for all operators on his segment.

Both Super Administrator and Administrator have full User rights. The four Users have no administrative rights. Depending on the permissions granted by the Super Administrator or Administrator, Users have varying degrees of control over the computers on the installation: Full Access; View Only; No Access. These rights are assigned on a port-by-port basis.

Operators (Super Administrator, Administrators, and Users) on the Master B060 Series KVM can have User access rights to all ports on the Slave KVMs. Access rights are given by the Super Administrator or Administrator with the BUS AUTHORIZATION function (see p. 24).

The operators on Slave KVMs can only access computers on their segment. This includes any computers connected to KVM switches that are cascaded down from the B060 Series KVM they are logged in on.

OSD Operation

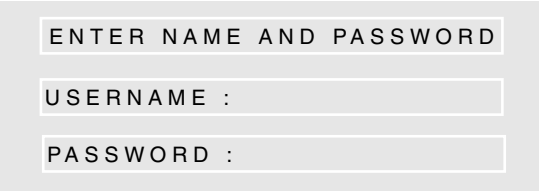
OSD Overview

The B060 Series KVM's On Screen Display (OSD) provides a visual, menu-driven, mouse enabled, interface that offers quick and convenient computer access and control, as well as efficient system administration including user management (access rights, passwords, etc.).

Each OSD menu option activates a function that configures and controls the operation of the KVM installation. All procedures start from the OSD Main Screen. To bring up the OSD Main Screen, tap the **Scroll Lock** key twice.

*Note: [Scroll Lock] is the default OSD hotkey. You can optionally change the Hotkey to the Ctrl key (see **OSD Hotkey**, p. 22, for details).*

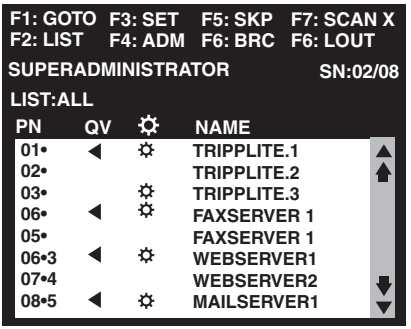
The login dialog box appears:



Key in a valid username and password, then press **[Enter]**.

*Note: If this is the first time that the OSD is being run, or if the password function has not been set, simply press **[Enter]**. The OSD Main Screen comes up in Super Administrator Mode. In this mode, you have access to all Administrator and User functions, and can set up operations (including password authorization for the future), as you would like.*

After you log in, a screen similar to the one below appears:



*Note: 1. The diagram depicts the Super Administrator's Main Screen. The User Main Screen does not show the **F4** and **F6** functions, since these are reserved for the Administrator and can't be accessed by ordinary Users.*

2. The OSD always starts in List view, with the highlight bar at the same position it was in the last time it was closed.

*3. Only the ports that have been set accessible by the Administrator for the currently logged in User are visible (see **SET ACCESSIBLE PORTS**, p. 24, for details).*

OSD Main Screen Headings

Heading	Explanation
SN	This field shows the Station Number that the currently selected port is connected to. The first number is the Station's position in the chain; the second number shows the total number of stations in the chain.
PN	This column lists the Port Numbers for all the CPU ports on the installation. The simplest method to access a particular computer is move the Highlight Bar to it, then press Enter.
QV	If a port has selected for Quick View scanning (see *Set Quick View Ports*, p. 24), an arrowhead displays in this column to indicate so.
¤	The computers that are powered on and are On Line have a Sun symbol in this column to indicate so.
NAME	If a port has been given a name (see *Edit Port Names*, p. 23), its name appears in this column.

OSD Navigation

Use the following procedures to navigate through OSD menus:

- To dismiss the Main Screen, and deactivate OSD, Click the **X** at the upper right corner of the OSD Window; or press **[Esc]**.
- To Logout, Click F8 at the top of the Main Screen, or press [F8].
- To move up or down through the list one line at a time, Click the Up and Down Triangle symbols (▲ ▼) or use the Up and Down Arrow Keys. If there are more list entries than there is room for on the Main Screen, the screen will scroll.
- To move up or down through the list one screen at a time, Click the Up and Down Arrow symbols (🡅🡇), or use the [Pg Up] and [Pg Dn] keys. If there are more list entries than there is room for on the Main Screen, the screen will scroll.
- To activate a port, Double Click it, or move the Highlight Bar to it then press [Enter].
- After executing any action, you automatically go back to the menu one level above.

OSD Functions

OSD functions configure and control the OSD. Examples of what can be accomplished with the OSD include: rapidly switching to any port; auto scanning specifically selected ports; limiting the list of ports you wish to view; designating a port as a Quick View Port; managing port names; user management, system administration, and making OSD setting adjustments.

To access an OSD function:

1. Either Click a Function Key field at the top of the Main Screen, or press a Function Key on the keyboard.
2. In the Submenus that appear make your choice either by Double Clicking it, or moving the Highlight Bar to it, then pressing **[Enter]**.
3. Press **[Esc]** to return to the previous menu level.

A complete description of the B060 Series KVM's OSD operations are given in the sections that follow.

OSD Functions

F1 GOTO

GOTO allows you to switch directly to a port either by keying in the port's *Name*, or its *Port ID*.

- To use the Name method, key in 1; key in the port's Name; then press **[Enter]**.
- To use the Port ID method, key in 2; key in the *Port ID*; then press **[Enter]**.
- Key in 3, to go to a Station on the installation other than the ones connected to the Station you are logged in on (see *Bus Authorization*, p. 24). Only an authorized operator at the Master Station (the top level B060 Series KVM) can use this function.

Note: You can key in a partial Name or Port ID. In that case, the screen will show all the computers that the User has View rights to (see SET ACCESSIBLE PORTS, p. 24), that match the Name or Port ID pattern, regardless of the current List settings (see F2 LIST below, for details).

To return to the OSD Main Screen without making a choice, press [Esc].

F2 LIST

Many of the OSD functions only operate on the computers that are currently displayed (listed) on the Main Screen. This function lets you broaden or narrow the scope of which ports the OSD lists on the Main Screen. The submenu choices and their meanings are given in the table below:

Choice	Meaning
ALL	Lists all of the ports on the installation.
POWERED ON	Lists only the ports that have their attached computers Powered On.
QVIEW	Lists only the ports that have been selected as Quick View Ports (see *SET ACCESSIBLE PORTS*, p. 24).
QVIEW + POWERED ON	Lists only the ports that have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, p. 24), and that have their attached computers Powered On.

Move the Highlight Bar to the choice you want, then press **[Enter]**. An icon appears before the choice to indicate that it is the currently selected one.

F3 SET

This function allows each operator to set up his own working environment. A separate profile for each is stored by the OSD and is activated according to the *Username* that was provided during Login.

To change a setting:

1. Double Click it; or move the highlight bar to it, then press [Enter].
2. After you select an item, a submenu with further choices appears. To make a selection, either Double Click it or move the Highlight Bar to it, then press [Enter]. An icon appears before the selected choice to indicate which one it is.

Note: All your setting changes are stored in temporary memory and remain in effect for the duration of your session. The changes only become permanent when you Log out of the OSD (see p. 26). If you shut down the B060 Series KVM without first logging out, your changes are discarded.

OSD Functions

The settings are explained in the following table:

Setting	Function
OSD HOTKEY	Selects which Hotkey activates the OSD function: **[Scroll Lock] [Scroll Lock]** or **[Ctrl] [Ctrl]**. Since the Ctrl key combination may conflict with programs running on the computers, the default is the Scroll Lock combination.
PORT ID DISPLAY POSITION	Allows you to position where the Port ID appears on the monitor. The default is the upper left corner, but you can have it appear anywhere on the screen. Use the Mouse or the Arrow Keys plus Pg Up, Pg Dn, Home, End, and 5 (on the numeric keypad with Num Lock off), to position the Port ID display, then Double Click or press **[Enter]** to lock the position and return to the Set submenu.
PORT ID DISPLAY DURATION	Determines how long a Port ID displays on the monitor after a port change has taken place. The choices are: **User Defined** - which lets you select the amount of time (from 1 - 255 sec.); and **Always On** - which displays the Port ID at all times. If you select User Defined, key in the number of seconds, then press **[Enter]**. The default is 3 Seconds. A setting of 0 (zero) disables this function.
PORT ID DISPLAY MODE	Selects how the Port ID is displayed: the Port Number alone **(PORT NUMBER)**; the Port Name alone **(PORT NAME)**; or the Port Number plus the Port Name **(PORT NUMBER + PORT NAME)**. The default is PORT NUMBER + PORT NAME).
SCAN DURATION	Determines how long the focus dwells on each port as it cycles through the selected ports in Auto Scan Mode (see F7 SCAN, p. 25). Key in a value from 1 - 255 seconds, then press **[Enter]**. Default is 5 seconds; a setting of 0 disables the Scan function.
SCAN/SKIP MODE	Selects which computers will be accessed under Skip Mode (see *F5 SKP*, p. 25), and Auto Scan Mode (see *F7 SCAN*, p. 25). Choices are: **ALL** - All the Ports which have been set Accessible (see *SET ACCESSIBLE PORTS*, p. 24); **POWERED ON** - Only those Ports which have been set Accessible and are Powered On; **QUICK VIEW** - Only those Ports which have been set Accessible and have been selected as Quick View Ports (see *SET QUICK VIEW PORTS*, p. 24); **QUICK VIEW + POWERED ON** - Only those Ports which have been set Accessible and have been selected as Quick View Ports and are Powered On. The default is ALL. *Note: The Quick View choices only show up on an Administrator's screen, since only he has Quick View setting rights (see SET QUICK VIEW PORTS, p. 24, for details).*
SCREEN BLANKER	If there is no input from the console for the amount of time set with this function, the screen is blanked. Key in a value from 1 - 30 minutes, then press **[Enter]**. A setting of 0 disables this function. The default is 0 (disabled).
HOTKEY COMMAND MODE	Enables / Disables the Hotkey Command function in case a conflict with programs running on the computers occurs. The default enabled.

OSD Functions

F4 ADM

F4 is a Super Administrator and Administrator only function. It allows them to configure and control the overall operation of the OSD. To change a setting Double Click it; or use the Up and Down Arrow Keys to move the highlight bar to it then press **[Enter]**.

After you select an item, a submenu with further choices appears. Double Click the choice you want, or move the Highlight Bar to it then press **[Enter]**. An icon appears before the selected choice to indicate which one it is. The settings are explained in the following table:

Note: All your setting changes are stored in temporary memory and remain in effect for the duration of your session. The changes only become permanent when you Log out of the OSD (see p. 26). If you shut down the B060 Series KVM without first logging out, your changes are discarded.

Setting	Function
SET USERNAME & PASSWORD	This function is used to set Usernames and Passwords: 1. One Super Administrator, one Administrator, and four User passwords can be set. 2. After you key in a name for the Super Administrator, Administrator, or User, a screen that allows you to key in the username and password appears. The username and password may be up to 15 characters long, and can consist of any combination of letters and numbers (A - Z, 0 - 9). 3. For each individual, key in the Username and Password, then press **[Enter]**. 4. To modify or delete a previous Username and/or Password, use the backspace key to erase individual letters or numbers.
SET LOGOUT TIMEOUT	If there is no input from the console for the amount of time set with this function, the Operator is automatically logged out. A login is necessary before the console can be used again. This enables other Operators to gain access to the computers when the original Operator is no longer accessing them, but has forgotten to log out. To set the timeout value, key in a number from 1 - 180 minutes, then press **[Enter]**. If the number is 0 [zero], this function is disabled. The default is 0 (disabled).
EDIT PORT NAMES	To help identify which computer is attached to a particular port, every port can be given a name. This function allows the Administrator to create, modify, or delete port names. To Edit a port name: 1. Click the desired port, or use the Navigation Keys to highlight the choice. Press **[Enter]**. 2. Key in the new Port Name, or modify/delete the old one. The maximum number of characters allowed for the Port Name is 15. Legal characters include: • All alpha characters: **a - z; A - Z** • All numeric characters: **0 - 9,_** • **+ - /** : . and **Space** Case does not matter; the OSD displays the Port Name in all capitals no matter how they were keyed in. 3. When you have finished editing, press **[Enter]** to have the change take effect. To abort the change, press **[Esc]**.
RESTORE DEFAULT VALUES	This function is used to undo all changes and return the setup to the original factory default settings (see *FACTORY DEFAULT SETTINGS*, p. 35) - except for the Names settings that were assigned to the Ports, which are saved.

CLEAR THE NAME LIST	This is similar to Restore Default Values. The difference is that it also clears the Names settings along with undoing all changes and returning the setup to the original factory default setting.
ACTIVATE BEEPER	Choices are **Y** (for Yes), or **N** (for No). When activated, the beeper sounds whenever a Port is changed; when activating the Auto Scan function (see F7 SCAN, p. 25); or an invalid entry is made on an OSD menu. The default is Y (activated).
SET QUICK VIEW PORTS	This function lets the Administrator select which Ports to include as Quick View ports. • To select/deselect a port as a Quick View Port, Double Click the port you want, or use the Navigation Keys to move the highlight bar to it, then press **[Enter]**. • When a port has been selected as a Quick View Port, an arrowhead displays in the QV column of the LIST on the Main Screen to indicate so. When a port is deselected, the arrowhead disappears. • If one of the Quick View options is chosen for the LIST view (see F2 LIST, p. 21), only a Port that has been selected here will display on the List. • If one of the Quick View options is chosen for Auto Scanning (see SCAN/SKIP MODE, p. 22), only a Port that has been selected here will be Auto Scanned. The default is for no ports to be selected.
SET ACCESSIBLE PORTS	This function lets the Administrator define Operator access to the computers on the installation on a Port-by-Port basis. For each Operator, select the target Port; then press the **[Spacebar]** to cycle through the choices: **F** (Full access), **V** (View Only), or blank (No access). Repeat until all access rights have been set, then press **[Enter]**. The default is **F** for all users on all Ports. *Note: A blank setting means that no access rights are granted. The Port will not show up on the User's LIST on the Main Screen.*
SET ACCESS TIMEOUT	If there is no input from the console accessing a particular port for the amount of time set with this function, the port is released, allowing it to be accessed by the other consoles. To set the timeout value, key in a number from 0 - 255 seconds, then press **[Enter]**. If the number is 0 [zero], this function is disabled. The default is 5 seconds.
SET KEYBOARD LANGUAGE	This function allows the Administrator to define the keyboard language layout for each port. To assign a keyboard language, select the target port; then press the **[Spacebar]** to cycle through the choices: US English; Japanese; or French. The default is US English.
SET OPERATING PLATFORM	This allows the Administrator to define the operating platform for the system connected to each port. To assign an operating platform, select the port; then press the **[Spacebar]** to cycle through the choices: Windows (PC compatible); Mac; and Sun. The default is Windows (PC compatible).
BUS AUTHORIZATION	This function allows the Super Administrator to authorize Operator access to Stations on the installation other than the ones connected to the Station the Operator is logged in on. For each Operator, press the **[Spacebar]** to cycle through the choices: **F** (Full access), **V** (View Only), or blank (No access). Repeat until all access rights have been set, then press **[Enter]**. The default is blank - No Operators have access rights to other Stations (and the computers connected to them).
FIRMWARE UPGRADE	In order to upgrade the B060 Series KVM's firmware, you must invoke Firmware Upgrade Mode with this setting. Only the Super Administrator on the Master Station can use this function.

OSD Functions

F5 SKP

This function enables you to easily skip backward or forward - switching the console focus from the currently active computer port to the previous or next available one.

- The selection of computers to be available for Skip Mode switching is made with the *Scan/Skip Mode* setting under the F3 SET function (see p. 21).
- When you are in Skip Mode, press [←] to switch to the previous computer in the List; press [→] to switch to the next computer in the List; press [↑] to switch to the last computer on the previous station in the List; press [↓] to switch to the first computer on the next station in the List.

  Note: When you Skip, you only Skip to the previous or next available computer that is in the ***Scan/Skip Mode*** *selection (see p. 22).*
- When the focus switches to a Port that has been selected for Scan/Skip Mode, a Left/Right Triangle symbol appears before its Port ID Display.
- While Skip Mode is in effect, the console will not function normally. You must exit Skip Mode in order to regain control of the console.
- To exit Skip Mode, press **[Spacebar]** or **[Esc]**.

F6 BRC

F6 is a Super Administrator or Administrator only function. Clicking the **F6** field, or pressing **[F6]**, invokes Broadcast (BRC) Mode. When this function is in effect, commands sent from the console are broadcast to all available computers on the installation.

This function is particularly useful for operations that need to be performed on multiple computers, such as performing a system wide shutdown, installing or upgrading software, etc.

BRC works in conjunction with the **F2 LIST** function. The LIST function (see p. 21), is used to broaden or narrow the focus of which Ports appear on the OSD Main Screen. When you Broadcast a command, it only goes to the Ports currently selected to be listed on the OSD Main Screen.

- While BRC Mode is in effect, a Speaker symbol appears before the Port ID Display of the port that currently has the console focus.
- While BRC Mode is in effect, the mouse will not function normally. You must exit BRC Mode in order to regain control of the mouse.
- To exit BRC Mode, invoke the OSD (with the OSD Hotkey), then Click the F6 field, or press **[F6]**, to turn BRC Mode off.

F7 SCAN

This function allows you to automatically switch among the available computers at regular intervals so that you can monitor their activity without having to take the trouble of switching yourself.

- The selection of computers to be included for Auto Scanning is made with the *Scan/Skip Mode* setting under the **F3 SET** function (see p. 21).
- The amount of time that each Port displays for is set with the *Scan Duration* setting under the **F3 SET** function (see p. 21). When you want to stop at a particular location, press the **[Spacebar]** or **[Esc]** to stop scanning and exit *Auto Scan Mode*.
- If the scanning stops on an empty port, or one where the computer is attached but is powered Off, the monitor screen will be blank, and the mouse and keyboard will have no effect. Simply wait—after the Scan *Duration* time is up, the Scan function will move on to the next port.
- As each computer is accessed, an S appears in front of the Port ID display to indicate that it is being accessed under *Auto Scan Mode*.
- While Auto Scan Mode is in effect, the console will not function normally. You must exit Auto Scan Mode in order to regain control of the console.
- While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P**, or with a Left Click of the mouse. See *Invoking Auto Scan*, p. 30, for details.
- To exit Auto Scan Mode, press the **[Spacebar]** or **[Esc]**.

OSD Functions

F8 LOUT

LOUT (Log Out) logs you out of OSD control of the computers, and blanks the Console screen. This is different from simply pressing **[Esc]** to deactivate the OSD when you are at the Main Screen. With this function you must log in all over again to regain access to the OSD, whereas with **[Esc]**, all you have to do to reenter the OSD is tap the OSD Hotkey.

Note: 1 When you reenter the OSD after logging out, the screen stays blank except for the OSD Main Screen. You must input your password before you can continue.

2. If you re-enter the OSD after logging out, and immediately use [Esc] to deactivate the OSD without having selected a port from the OSD menu, a Null Port message displays on the screen. The OSD Hotkey will bring up the Main OSD Screen.

Cascaded OSD Operation

Under *Protocol Interface Cascading* (see p. 12), the OSDs of the cascaded switches are all seamlessly integrated into the B060 Series KVM's OSD so that all ports can be accessed from there.

Under *Physical Interface Cascading* (see p. 13), however, there are two separate OSDs: one for the B060 Series KVM, and one for the cascaded switch.

If both the B060 Series KVM and the cascaded switch use the same OSD Hotkey (**[Scroll Lock] [Scroll Lock]**, for example), both OSDs show up on the console monitor when you invoke the OSD.

The B060 Series KVM's OSD is on top, overlaying the OSD of the cascaded switch. To proceed, select the port that the cascaded switch is connected to on the B060 Series KVM's OSD. The B060 Series KVM's OSD disappears, leaving the cascaded switch's OSD for you to work with.

You can eliminate this problem by selecting the alternate OSD Hotkey (**[Ctrl] [Ctrl]**) for the cascaded switch (see the switch's User Manual for details). With this method when you press **[Scroll Lock] [Scroll Lock]**, only the B060 Series KVM's OSD comes up. To proceed:

1. Select the port that the cascaded switch is connected to. The B060 Series KVM's OSD disappears.
2. Tap **[Ctrl] [Ctrl]** to bring up the cascaded switch's OSD for you to work with.

Hotkey Operation

Hotkey Port Control

Hotkey Port Control allows you to provide KVM focus to a particular computer directly from the keyboard.

Note: Hotkeys work best in single stage and basic cascaded or daisy chained installations. For complicated daisy chain+cascaded installations, it is simpler, more convenient and more efficient to use the OSD.

The B060 Series KVM provides the following Hotkey Port Control features:

- Selecting the Active Port
- Auto Scanning
- Skip Mode Switching

Invoking Hotkey Mode

All Hotkey operations begin by invoking the Hotkey Mode (HKM). Invoking the Hotkey Mode takes three steps:

1. Hold down the **Num Lock** key;
2. Press the * key;
3. Simultaneously release both keys:

   [Num Lock] + **[*]**
   or
   [Num Lock] + **[-]**

When the Hotkey Mode is active:

- The Caps Lock, and Scroll Lock LEDs flash in succession to indicate so. They stop flashing and revert to normal status when you exit the Hotkey Mode.
- A Command Line appears at the bottom of the monitor screen. The command line prompt is the word *Hotkey*: in white text on a blue background. Text that you key in while in the Hotkey Mode displays here.
- Ordinary keyboard and mouse functions are suspended - only Hotkey compliant keystrokes and mouse clicks (described in the sections that follow), can be input.
- Pressing **[Esc]** or **[Spacebar]** exits the Hotkey Mode.

Selecting the Active Port

Each CPU port is assigned a Port ID (see *Port ID Numbering*, p. 17). You can directly access any computer on the installation with a Hotkey combination that specifies the Port ID of the CPU Port that the computer is connected to. The steps involved are:

1. Invoke Hotkey Mode (see above).
2. Key in the Port ID. The Port ID numbers display on the Command Line as you key them in. If you make a mistake, use [Backspace] to erase the wrong number.
3. Press **[Enter]**

After you press [Enter], the KVM focus switches to the designated computer and you automatically exit Hotkey Mode.

Auto Scanning

Auto Scan switches among all the CPU Ports that are accessible to the current Operator at regular intervals (see *Scan/Skip Mode*, p. 22, for information regarding accessible ports). This function is convenient for automatically monitoring the activity of the computers on the installation.

Setting the Scan Interval: The amount of time Auto Scan dwells on each port is set with the Scan Duration setting of the OSD **F3 SET** function (see p. 21). You can change the scan interval before activating Hotkey Auto Scanning, if you wish, with the following Hotkey combination:

1. Invoke the Hotkey Mode (see p. 27).
2. Key in **[T] [n]**

   Where [T] is the letter T, and [n] is a number from 1-255 that represents the number of seconds for the dwell time. The letter T and the numbers display on the Command Line as you key them in. If you make a mistake, use [Backspace] to erase the wrong number.
3. Press **[Enter]**

After you press [Enter], you automatically exit the Hotkey Mode, and are ready to invoke Auto Scanning.

Invoking Auto Scan:

To start Auto Scanning, key in the following Hotkey combination:

1. Invoke the Hotkey Mode (see p. 27).
2. Press **[A]**.

   After you press **A**, you automatically exit the Hotkey Mode, and enter Auto Scan Mode, and Auto Scanning begins.

   • While you are in Auto Scan Mode, you can pause the scanning in order to keep the focus on a particular computer either by pressing **P** or with a Left Click of the mouse. During the time that Auto Scanning is paused, the Command Line displays: **Auto Scan: Paused**.

   Pausing and *Exiting* are the two ways to stop scanning and keep the focus on a particular computer. If you intend to continue scanning after a brief stop, *Pausing* is more convenient than *Exiting* Auto Scan Mode completely. This is because when you Resume scanning after Pausing, you start from where you left off. On the other hand, if you Exit and then Restart Auto Scan, you start over from the very first computer on the installation.

   To *Resume* Auto Scanning after you Pause, press any key or Left Click. Scanning continues from where it left off.

   • While Auto Scan Mode is in effect, ordinary keyboard and mouse functions are suspended—only Auto Scan Mode compliant keystrokes and mouse clicks can be input. You must exit Auto Scan Mode in order to regain normal control of the console.
3. To exit Auto Scan Mode press **[Esc]** or **[Spacebar]**. Auto Scanning stops when you exit Auto Scan Mode.

Skip Mode

This feature allows you to switch between computers in order to monitor them manually. In contrast to Auto Scanning, which automatically switches after a fixed interval, Skip Mode lets you dwell on a particular port for as long as you like. To invoke Skip Mode, key in the following Hotkey combination:

1. Invoke Hotkey Mode (see p. 27).
2. Key in **[Arrow]**
   - Where [Arrow] refers to one of the Arrow keys. After you press [Arrow], you automatically exit HKM, and enter Skip Mode where you can switch ports as follows:
     - ← Skips from the current port to the first accessible port previous to it. (See Scan/Skip Mode, p. 22, for information regarding accessible ports.)
     - → Skips from the current port to the next accessible port.
     - ↑ Skips from the current port to the last accessible port of the previous Station.
     - ↓ Skips from the current port to the first accessible port of the next Station.
   - Once you are in Skip Mode, you can keep on skipping by pressing the Arrow keys. You don't have to use the **[NumLock]** + **[*]** combination each time you want to skip.
   - While Skip Mode is in effect, ordinary keyboard and mouse functions are suspended - only Skip Mode compliant keystrokes can be input. You must exit Skip Mode in order to regain normal control of the console.
3. To exit Skip Mode, press **[Esc]** or **[Spacebar]**.

Hotkey Beeper Control

The Beeper (see Activate Beeper, p. 24) can be Hotkey toggled On and Off. To toggle the Beeper, key in the following Hotkey combination:

1. Invoke Hotkey Mode (see p. 27).
2. Press **[B]**

After you press **B**, the Beeper toggles On or Off. The Command Line displays *Beeper On* or *Beeper Off* for one second; then the message disappears and you automatically exit the Hotkey Mode.

Hotkey Summary Table

[Num Lock] + **[*]** or **[Num Lock]** + **[-]**	**[Port ID] [Enter]**	Switches access to the computer that corresponds to that Port ID.
	[T] [n] [Enter]	Sets the Auto Scan interval to n seconds- where n is a number from 1 - 255.
	[A]	Invokes Auto Scan Mode. When Auto Scan Mode is in effect, **[P]** or Left Click pauses Auto Scanning. When Auto Scanning is paused, pressing Any Key or another Left Click resumes Auto Scanning.
	[←]	Invokes Skip Mode and Skips from the current port to the first accessible port previous to it.
	[→]	Invokes Skip Mode and Skips from the current port to the next accessible port.
	[↑]	Invokes Skip Mode and Skips from the current port to the last accessible port of the previous Station.
	[↓]	Invokes Skip Mode and Skips from the current port to the first accessible port of the next Station.
	[B]	Toggles the Beeper On or Off.

Multiplatform Support

The B060 Series KVM provides the utmost in flexibility for your installation by offering multi-platform support. Through the use of Console Modules and KVM Adapter Cables, PS/2 and USB interfaces can be mixed and matched at the console side, and PS/2, USB and Sun interfaces can be mixed and matched at the computer side. With this approach, either type of console can access and control multiple computer types - PC compatible, Sun and Mac.

The PC Compatible (101/104 key) keyboard can emulate the functions of the Sun Mac keyboards. The corresponding functions are shown in the tables on the following pages.

Mac Keyboard Emulation

Pc Keyboard	Mac Keyboard
[SHIFT]	Shift
[Ctrl]	Ctrl
[Win]	⌘
[Ctrl] [1]	Mult
[Ctrl] [2]	V_DN
[Ctrl] [3]	V_UP
[Ctrl] [4]	⏏
[Alt]	L Alt/Option
[Prt_Sc]	F13
[Scroll Lock]	F14
[Desktop Menu]	=
[Enter]	Return
[Back Space]	Delete
[Ins]	Help
[Ctrl] [Desktop Menu]	F15

Note: When using key combinations, press and release the first key (Ctrl or Alt), then press and release the activation key.

Sun Keyboard Emulation

Pc Keyboard	Sun Keyboard
[Ctrl] [T]	Stop
[Ctrl] [F2]	Again
[Ctrl] [F3]	Props
[Ctrl] [F4]	Undo
[Ctrl] [F5]	Front
[Ctrl] [F6]	Copy
[Ctrl] [F7]	Open
[Ctrl] [F8]	Paste
[Ctrl] [F9]	Find
[Ctrl] [F10]	Cut
[Ctrl] [1]	
[Ctrl] [2]	
[Ctrl] [3]	
[Ctrl] [4]	
[Ctrl] [H]	Help
App	Compose
Win Key	◆

Note: When using [Ctrl] combinations, press and release the Ctrl key, then press and release the activation key.

The Firmware Upgrade Utility

Introduction

Purpose

The purpose of the Windows-based Firmware Upgrade Utility (FWUpgrade.exe) is to provide an automated process to make upgrading the KVM switch's firmware as smooth and painless as possible.

The program comes as part of a Firmware Upgrade Package that is specific for each device.

As new firmware revisions become available, new firmware upgrade packages are posted on our web site:

http://www.tripplite.com

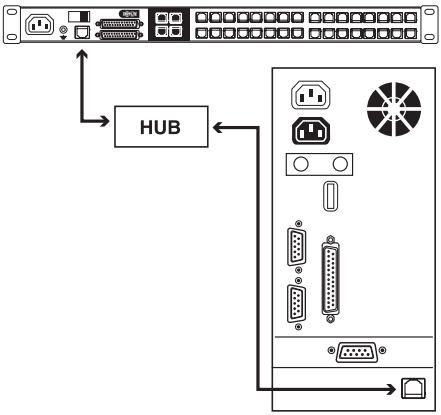
Check the web site regularly to find the latest information and upgrade packages.

Before You Begin

To prepare for the firmware upgrade, do the following:

1. From a computer that is not part of your KVM installation go to our Internet support site and choose the model name that relates to your device to get a list of available Firmware Upgrade Packages.
2. Choose the Firmware Upgrade Package you want to install (usually the most recent), and download it to your computer.
3. Use Cat5e cable to connect the B060 Series KVM's Firmware Upgrade Port to a hub connected to the computer you used in Step 1.

   Note: On a daisy chained installation, connect the cable to the First Station unit. The chained stations will receive the upgrade via the daisy chain cables.



4. Shut down all of the computers - but not the Stations - on your KVM installation.
5. From your KVM switch console, bring up the OSD and select the F4ADM function.
6. Scroll down to FIRMWARE UPGRADE. Press [Enter], then press [Y] to invoke Firmware Upgrade Mode.

Performing the Upgrade

Starting the Upgrade

To upgrade your firmware:

1. To run the downloaded Firmware Upgrade Package file, either double click the file icon, or open a command line and enter the full path to it. The Firmware Upgrade Utility Welcome screen appears.
2. Read and *Agree* to the License Agreement (enable the I Agree radio button).
3. Click Next to continue. The Firmware Upgrade Utility main screen appears:
   The Utility inspects your installation. The devices capable of being upgraded by the package are listed in the *Device List* panel.

   Note:
   1. *Although only one device type is shown in the list (B062-001-PS2, for example), all units of that type receive the upgrade.*
   2. *B060-016-2U or B060-032U refers to the first station in a daisy-chained configuration; B060-016-2N or B060-032N refers to the chained stations.*
   3. *A blue background behind the device name indicates that it is ready to be upgraded.*
   4. *When the list is complete, click **Next** to start the upgrade.*
      - *If you enabled **Check Firmware Upgrade**, the Utility compares the device's firmware level with that of the upgrade files. If it finds that the device's version is higher, it brings up a dialog box informing you of the situation and gives you the option to Continue or Cancel.*
      - *If you didn't enable **Check Firmware Upgrade**, the Utility installs the upgrade files without checking their version level.*
      - *While a device group is being upgraded, the background behind its name changes to green and blinks on and off to indicate that upgrading for that device group is in progress.*
      - *As the Upgrade proceeds, status messages appear in the **Status Messages** panel, and the progress toward completion is shown on the Progress bar.*
      - *As each device update completes, its status is reported in the **Status Messages** panel.*
      - *When a device group upgrade is successful, the background behind the device group name changes to pink; if a member of a device group fails to upgrade successfully, the background behind the device group name changes to red to indicate an upgrade failure in the group. Check the Status Messages to ascertain which device failed to upgrade.*
   5. *When the upgrade for all the devices is done, click **Finish** to close the Utility.*

Upgrade Failure

If the upgrade fails to complete successfully for all devices:

1. Click **Finish** to close the Firmware Upgrade Utility.
2. Start the firmware upgrade procedure again (see above).
3. When the Device List is complete, Click on the device group that the failed device belongs to in the Device List panel (see above).
4. Click **Next** to start the upgrade.

Appendix

Connection Tables

The following tables indicate the relationship between the number of KVM units and the number of computers that they control:

B060-032 Daisy Chain

B060-032s	Computers
1	1 - 32
2	33 - 64
3	65 - 96
4	97 -128
5	129 - 160
6	161 - 192
7	193- 224
8	225 - 256

B060-016-2 Daisy-Chain

B060-016-2	Computers
1	1-16
2	17-32
3	33-48
4	49-64
5	65-80
6	81-96
7	97-112
8	113-128

B060-032 Cascade to Tripp Lite B007-008

KVMs	Computers	KVMs	Computers	KVMs	Computers	KVMs	Computers
1	32 - 39	9	89 - 95	17	145 - 151	25	201 - 207
2	40 - 46	10	96 - 102	18	152 - 158	26	208 - 214
3	47 - 53	11	103 - 109	19	159 - 165	27	215 - 221
4	54 - 60	12	110 - 116	20	166 - 172	28	222 - 228
5	61 - 67	13	117 - 123	21	173 - 179	29	229 - 235
6	68 - 74	14	124 - 130	22	180 - 186	30	236 - 242
7	75 - 81	15	131 - 137	23	187 - 193	31	243 - 249
8	82 - 88	16	138 - 144	24	194 - 200	32	250 - 256

B060-016-2 Cascade to Tripp Lite B007-008

KVMs	Computers	KVMs	Computers	KVMs	Computers	KVMs	Computers
1	32 - 39	5	61 -74	9	88 - 95	13	117 - 123
2	40 - 46	6	68 - 74	10	96 - 102	14	124 - 130
3	47 - 53	7	75 - 81	11	103 - 109	15	131 - 137
4	54 - 60	8	82 - 88	12	110 - 116	16	138 - 144

OSD Factory Default Settings

The factory default settings are as follows:

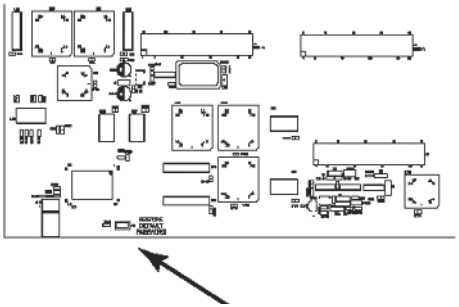
Setting	Default
OSD Hotkey	**[Scroll Lock] [Scroll Lock]**
Port ID Display Position	Upper Left Corner
Port ID Display Duration	3 Seconds
Port ID Display Mode	The Port Number plus the Port Name
Scan Duration	5 Seconds
Scan/Skip Mode	All
Screen Blanker	0 (Disabled)
Hotkey Command Mode	Enabled
Logout Timeout	0 (Disabled)
Beeper Y	(Activated)
Quick View Ports	No ports selected
Accessible Ports	F (Full) For all Users on all Ports
Access Timeout	5 seconds
Keyboard Language Operating Platform	PC compatible
Bus Authorization	Blank - No Operators have access rights

OSD Factory Default Settings

Clear Login Information

If you are unable to perform an Administrator login (because the Username and Password information has become corrupted, or you have forgotten it, for example), you can clear the login information with the following procedure:

1. Power off the switch and remove the top cover of the switch module case.
2. Short the jumper labeled Default Password at the right front of the switch's main board.



3. Power on the switch.

   When you power the switch on, the following message appears on the LCD display:

   USERNAME AND PASSWORD INFORMATION HAS BEEN CLEARED. PLEASE POWER OFF THE SWITCH, REMOVE THE JUMPER, CLOSE THE CASE, THEN RESTART.

4. After you start back up, the OSD login function acts exactly the way it did the first time the switch was run (see p. 20) and you can reset passwords for the Administrators and Users.

Specifications

Function		Specification B060-032	Specification B060-016-2
Computer Connections	Direct	32	16
	Max	256 (via 8 level daisy chain) 256 (via 2 level cascade) 2,048 (via 8 level daisy chain + 2 level cascade)	128 (via 8 level daisy chain) 128 (via 2 level cascade) 1,024 (via 8 level daisy chain + 2 level cascade)
Console Connections		4 Direct; 32 Max. (via 8 level daisy chain)	2 Direct; 16 Max. (via 8 level daisy chain)
Port Selection		OSD (On Screen Display); Hotkeys	OSD (On Screen Display); Hotkeys
LEDs	On Line/Selected	32 dual colored (Green / Red)	16 dual colored (Green / Red)
	Power	1 (Blue)	1 (Blue)
	Station ID	2 x 7 segments (Yellow)	2 x 7 segments (Yellow)
Connectors	Computers	32 x RJ-45 F	16 x RJ-45 F
	Consoles	4 x RJ-45 F	2 x RJ-45 F
	Daisy Chain	2 x HDB-60 F	2 x HDB-60 F
	Firmware Upgrade	1 x RJ-45 F	1 x RJ-45 F
	Power	1 x Full Range AC Power Port	1 x Full Range AC Power Port
Switches	Reset	1 x Pushbutton (semi-hidden)	1 x Pushbutton (semi-hidden)
	Power	1 x Rocker	1 x Rocker
	F/W Upg. Recover	1 x Slide	1 x Slide
Keyboard/Mouse Emulation		PS/2; Sun; USB (PC, Sun, Mac)	PS/2, Sun; USB (PC, Sun, Mac)
Scan Interval		0 - 255 secs.	0 - 255 secs.
Power Consumption		120V - 230V	120V - 230V
Video		1024 x 768 @ 150m; DDC2B	1024 x 768 @ 150m; DDC2B
Environment		Operating Temperature: 32 - 120° F	Operating Temperature: 32-120° F
Storage Temperature: -		4 - 140° F Humidity: 0 - 80% RH, NC	4-140° F Humidity: 0-80% RH, NC
Housing		Metal	Metal
Weight		8.75 lbs	7.75 lbs.
Dimensions		(L x W x H) 17 x 10 x 1.75 inches	(L x W x H) 17 x 10 x 1.75 inches

Console Interface Modules

Function		B062-001-PS2	B062-001-USB
Connectors	Console Keyboard	1 x mini-DIN-6 F	1 x USB Type A
	Console Mouse	1 x mini-DIN-6 F	1 x USB Type A
	Console Monitor	1 x HDB-15 F	
	Link to B060 series	1 x RJ-45 F	
	Power	1 x DC 5V	
LEDs	On Line	1 (Amber)	
	Link	1 (Green)	
Switches		1 x Slide (FW Upgrade Recovery)	

Server Interface Modules

Function		B054-001-PS2	B054-001-SUN	B054-001-USB
Connectors	Keyboard	1 x mini-DIN-6 M	1 x USB Type A	1 x USB Type A
	Mouse	1 x mini-DIN-6 M	1 x USB Type A	1 x USB Type A
	Monitor	1 x HB15 M		
	Link to B060 series	1 x RJ-45 F		
LEDs	On Line	1 (Amber)		
	Link	1 (Green)		
Switches		1 x Slide (FW Upgrade Recovery)		

Troubleshooting

Symptom	Possible Cause	Action
Operator can only access one port on a cascaded KVM. Cannot switch to any of the other ports	The cascaded KVM's display channel is being occupied by a previous user	There is only one display channel for all the ports on a cascaded KVM switch. The previous operator's access timeout expired, so the port is released, but his logout timeout has not expired so the display channel has not been released. To avoid this problem, be sure to set a reasonable logout timeout, for all users.

FCC Radio/TV Interference Notice

Note: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense. The user must use shielded cables and connectors with this product. Any changes or modifications to this product not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

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* No purchase necessary. Void where prohibited. Some restrictions apply. See website for details.

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